Build Python Code

- Let we build flask file 'app.py' which is a web framework written in python for server-side scripting. Let's see step by step procedure for building the backend application.
- App starts running when "__name__" constructor is called in main.
- render_template is used to return html file.
- "GET" method is used to take input from the user.
- "POST" method is used to display the output to the user.

- Importing Libraries
- Creating our flask application and loading our model
- Routing to the html Page

The above three route are used to render the home, introduction and the index html pages

And the predict route is used for prediction and it contains all the codes which are used for predicting our results.

- Firstly, inside launch function we are having the following things:
  - Getting our input and storing it
  - Grab the frames from the web cam.
  - Creating ROI
  - Predicting our results
  - Showcase the results with the help of opencv
  - Finally run the application
- Getting our input and storing .
  Once the predict route is called, we will check whether the method is POST or not if is POST then we will request the image files and with the help of os function we will be storing the image in the uploads folder in our local system.
- Grab the frames from the web cam
  Now when we run the code a web cam will be opening to take the gesture input so we will be capturing the frames of the gesture for predicting our results.
- Creating ROI

A region of interest (ROI) is a portion of an image that you want to filter or operate on in some way. The toolbox supports a set of ROI objects that you can use to create ROIs of many shapes, such circles, ellipses, polygons, rectangles, and hand-drawn shapes. ... A common use of an ROI is to create a binary mask image.

So, we will be creating a ROI to mask our gesture.

- Predicting our results

After placing the ROI and getting the frames from the web cam now its time to predict the gesture result using the model which we trained and stored it into a variable for the further operations.

- Showcase the results with the help of opencv
  Finally according to the result predicted with our model we will be performing certain operations like resize, blur , rotate etc.